CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/KRIDL/W.No.14/CSR.11/674i/(QB)/2014-15 19.11.2014

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

* CUSTOMER	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
* NAME OF WORK	:	Improvements to 1st Main Road at Munikondappa Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	:	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 10.11.2014
SAMPLE ID	:	Bitumen
SAMPLE RECEIVED ON	:	10.11.2014
PERIOD OF TESTING	:	10.11.2014 to 19.11.2014

The results of the tests conducted on the Bitumen sample are as follows:

Sl.No	Description	Technical Reference	Test Result	Requirement as per IS: 73-2013
1	Penetration at 25^{0}C, 100g, 5 Sec 1/10 mm	IS: 1203-1978 (RA-2009)	83.0	80 to 100
2	Softening point, ^{0}C	IS: 1205-1978 (RA-2009)	51.0	Min. 40
3	Ductility at 27^{0}C, cm	IS: 1208-1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS: 1209-1978 (RA-2009)	284	Min. 220

*Information is furnished by the Customer/Representative.

Note:

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⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

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VISHWANATH .C
Quality Manager

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ಟಿ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
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Job No.: CTCE/BBMP/KRIDL/W.No.14/GSB-1/GR/2014-15 Date : 12.11.2014

GRADATION FOR GSB-I (CLOSE GRADED)
IS: 2720 (Part 4)

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to 1st Main Road at Munikondappa Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 10.11.2014

Date of Testing : 12.11.2014

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 25000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	0	100
53.0	990	990	3.96	96.04	80-100
26.50	6275	7265	29.06	70.94	55-90
9.50	5235	12500	50.00	50.00	35-65
4.75	3580	16080	64.32	35.68	25-55
2.36	2695	18775	75.10	24.90	20-40
0.425	2520	21295	85.18	14.82	10-25
0.075	2415	23710	94.84	5.16	3-10
PAN	1290				
Total	25000				

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Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

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Job No.: CTCE/BBMP/KRIDL/W.No.14/WMM/Gradation/2014-15

15.11.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to 1st Main Road at Munikondappa Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 10.11.2014

Date of Testing : 15.11.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **25400**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1025	1025	4.0	96.0	95-100
22.4	6150	7175	28.2	71.8	60-80
11.2	5485	12660	49.8	50.2	40-60
4.75	4460	17120	67.4	32.6	25-40
2.36	3285	20405	80.3	19.7	15-30
0.600	2365	22770	89.6	10.4	8-22
0.075	2275	25045	98.6	1.4	0-8

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Job No.: CTCE/BBMP/KRIDL/W.No.14/SDBC/Bit/2014-15 20.11.2014

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS PER IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to 1st Main Road at Munikondappa Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 10.11.2014
SAMPLE I/D	1st Main Road, Munikondappa Layout W.No.14, BBMP, Bangalore.
DATE OF TESTING	20.11.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.50
7. Bitumen content in %	5.10	5.10
8. Average	**5.10**	

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Job No.: CTCE/BBMP/KRIDL/W.No.14/SDBC/Bit/2014-15 20.11.2014

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX AS PER IS2386 & IRC:SP:11-1984

CUSTOMER	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to 1st Main Road at Munikondappa Layout in Ward No.14, Bagalagunte, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 10.11.2014
SAMPLE I/D	1st Main Road, Munikondappa Layout W.No.14, BBMP, Bangalore
DATE OF TESTING	20.11.2014

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GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	36.25	7.64	7.64	92.36	90-100
4.75	252.3	53.17	60.81	39.19	35-51
2.36	55.48	11.69	72.50	27.50	24-39
1.18	45.23	9.53	82.04	17.96	15-30
0.3	26.78	5.64	87.68	12.32	9-19
0.075	28.12	5.93	93.61	6.39	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	37.23	7.85	7.85	92.15	90-100
4.75	252.9	53.30	61.14	38.86	35-51
2.36	55.47	11.69	72.83	27.17	24-39
1.18	43.21	9.11	81.94	18.06	15-30
0.3	32.58	6.87	88.81	11.19	9-19
0.075	28.63	6.03	94.84	5.16	3-8

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